# Municipal Quarterly Update
*4th Quarter 2017*

**Municipal Securities Team**

## 4th Quarter 2017 Municipal Market Performance and Highlights

- **Municipals outperform in 4Q2017:** Municipal market returns were broadly positive in the fourth quarter of 2017. The Bloomberg Barclays Municipal Bond Index returned 0.75% during the fourth quarter of 2017 compared to 1.06% in the third quarter of 2017, and outperformed the Bloomberg Barclays U.S. Treasury Bond Index by 70 basis points (bps), which generated a return of 0.05% in the fourth quarter of 2017. For all of 2017, the Bloomberg Barclays Municipal Bond Index had a total return of 5.45%, compared to the Bloomberg Barclays U.S. Treasury Bond Index return of 2.31%.
- **Tax Reform and Fed Activity:** Healthy U.S. economic fundamentals, an unsettling geopolitical landscape and the continuance of global quantitative easing (QE) programs between the European Central Bank (ECB) and Bank of Japan (BOJ) were contributing factors in the global rates markets and U.S. Treasury bond prices in the fourth quarter. Additional influences were the passage of tax reform and U.S. Federal Reserve activity, including the continuation of rate normalization to the upside and the beginning of balance sheet downsizing. At December 31, 2017, the 10-year U.S. Treasury yield stood at approximately 2.40%, representing a 7 basis point increase from 2.33% at September 30, 2017.
- **Municipal Issuance Explodes Higher as Tax Reform Proposals Restrict Issuance:** In the fourth quarter of 2017, primary market municipal bond issuance increased by a monstrous 39.8% year-over-year. New issue supply was greatly aided by December's record supply of over $64 billion (versus the average over the past two Decembers of $22 billion), as issuers rushed to market in the face of tax reform eliminating advance refunding of municipal bonds on a tax-exempt basis. While private activity bond's (PAB) tax exemption was left unchanged, the threat of repeal ushered in a wave of issuance by hospitals, colleges, and universities, among other industries. New issue supply totaled $439 billion for the year, only 2% lower than a year ago when the market had record supply ($446 billion in 2016).
- **Retail Demand Stays Consistently Positive:** Retail demand for the fourth quarter totaled $2.1 billion versus $8.8 billion for the third quarter of 2017. Total net inflows for 2017 were $24.1 billion, 5.6% less than 2016's total net inflows of $25.5 billion. Municipal fund flows were positive during each of the first eleven months of 2017, ranging from a positive $873 million to $3.8 billion, and turned negative in December with outflows of $1.3 billion.
- **Credit Trends were Positive, Despite High-Profile Defaults:** As a whole, municipal credit quality trends remained favorable in 2017. Through December 31, 2017, using Municipal Market Analytics (MMA) data, first-time municipal defaulters totaled just 43 borrowers compared to 2016 with 69 borrowers. According to MMA data, 2017 default numbers indicate a record low number of defaulting borrowers going back to when the data was first available in 2009. Moody's credit rating upgrade vs. downgrade ratios also suggest favorable credit trends, with the number of credit rating upgrades exceeding downgrades in two of the first three quarters of 2017, including the quarter ended September 30, 2017.
- **Tighter Credit Spreads:** During the fourth quarter of 2017, credit spreads continued to tighten for both "AAA" and "BBB" rated municipal securities in the 10 year through 30 year part of the curve. We believe "BBB" credit spreads for new bond issues are tighter than their five year historical average.

## 2018 Outlook and Strategy

- In spite of our expectation for gradually higher rates in 2018, we believe intermediate maturity municipal bonds will generate positive total returns of approximately 2.0% to 2.5% for the year. Regarding high yield municipal bonds, given we project credit spreads to tighten, we believe intermediate high yield munis will experience positive total returns of between 2.5% and 3.0% for 2018. This is based on applying our total return analysis to bonds in the intermediate portion of the municipal yield curve.
- The Federal Reserve (Fed) hiked rates by 25 basis points on December 13, 2017 and signaled its intention to continue raising rates at a gradual pace. With the Fed in the process of normalizing short-term interest rates, we believe the Fed is likely to raise the Fed Funds rate two to three times in 2018. We see the 10-year U.S. Treasury yield ending the year between 2.75% and 3.00%. Further influencing 2018 will be the Fed continuing to shrink its $4.5 trillion balance sheet through the tapering program it defined in late 2017. As the Fed has stated, Fed rate actions will be data dependent, with a focus on supportive economic data including jobs and wage growth, inflation and inflation expectations.
- We expect issuance will decline to $290-$330 billion in 2018 from $439 billion in 2017. With issuers having rushed to market in November-December of 2017 given the potential loss of both advance refundings and PABs as part of tax reform legislation, coupled with the actual inability to issue advance refundings on a tax-exempt basis in 2018, new issue supply could be over $100 billion lower than in 2017.
- Despite our expectation for higher rates in 2018, we believe flows into municipal bond funds will be positive, but volatile, particularly if yields move higher and bond prices decline for a persistent period of time at some point during the year. In view of the relative attractiveness of risk-adjusted municipal returns versus other asset classes (see Figure 2), we believe any sustained outflows that lead to higher yields will be viewed by investors as an attractive buying opportunity.

- Recognizing that 2017 finished with the lowest municipal default count since the data became available in 2009, coupled with positive upgrade vs. downgrade credit rating trends by Moody's, we expect municipal credit quality to be broadly stable in 2018. Relatively healthy municipal credit trends are supported by healthy job growth, wage gains, low unemployment and growing revenues supported by strong property, income and sales taxes for states and local municipalities (see Figure 5). However, large municipal borrowers such as the States of Illinois and New Jersey will continue to grapple with growing pension and healthcare liabilities that outpace revenue growth.
- Against this backdrop, we continue to structure our portfolios defensively, choosing strategies that benefit from yield curve positioning, bond structure, and positive credit fundamentals. More specifically we favor:

| Yield Curve/Structure | Credit Overweight | Industry Weightings |
|---|---|---|
| • 7-12 year maturities<br>• 13-20 year maturities priced to a 6-9 year call<br>• 5% (and higher) coupon bonds versus 3% and 4% coupon bonds | • "A" rated bonds over "AAA" rated bonds<br>• Given current new issue spreads, we advise caution on new issue purchases of "BBB" rated bonds<br>• Purchase below investment grade and non-rated bonds; however, don't buy the market | • Overweight revenue bonds of essential service providers—senior living, special tax, charter schools, and utilities<br>• Underweight general obligation bonds |

## Relative Value

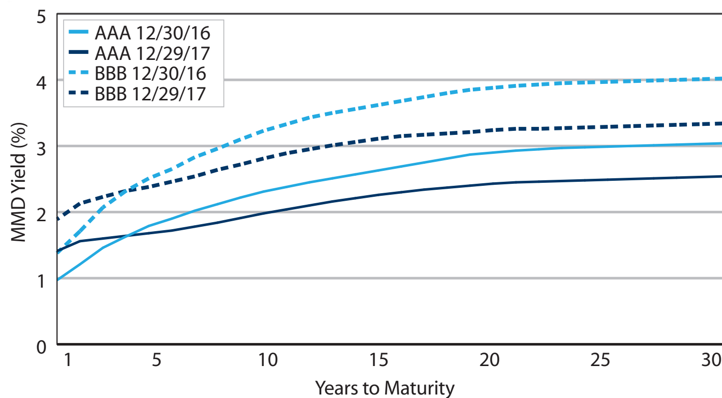
- **Risk-Adjusted Returns:**
  - In five of the last seven calendar years, investment-grade munis or high-yield munis have been the top performer on a taxable equivalent, risk-adjusted basis (see Figure 2). In fact, investment-grade munis and high-yield munis have been the best and second best performers, in some order, in four of the last seven years, highlighting the value of municipal tax-exemption, low historical default rates, and low relative volatility.
  - Over the last 10 years, municipal bonds (both investment-grade and high-yield) offered superior returns per unit of risk (standard deviation) (see Figure 6).
- **MMD/Treasury Ratios:** As the table demonstrates, Municipal Market Data (MMD)/Treasury ratios got richer (more expensive) during the fourth quarter of 2017. On the 10-year part of the curve, the MMD/Treasury ratio changed from 87.0% to 81.9%, and, according to Barclays, is considered rich compared to the one-year historical average. Regarding the 30-year part of the curve, the MMD/Treasury ratio moved from 99.3% to 92.5%, and is considered very rich compared to the one-year historical average. This data suggests that crossover (i.e. taxable) fixed income buyers find buying municipal bonds less attractive as ratios became richer.

| *12/31/2017* | **10yr** | **30yr** |
|---|---|---|
| MMD | 1.99% | 2.55% |
| Treasury | 2.43% | 2.76% |
| **Ratio** | **81.85%** | **92.49%** |
| *9/30/2017* | **10yr** | **30yr** |
| MMD | 2.00% | 2.85% |
| Treasury | 2.30% | 2.87% |
| **Ratio** | **86.96%** | **99.30%** |

*Source: Barclays*

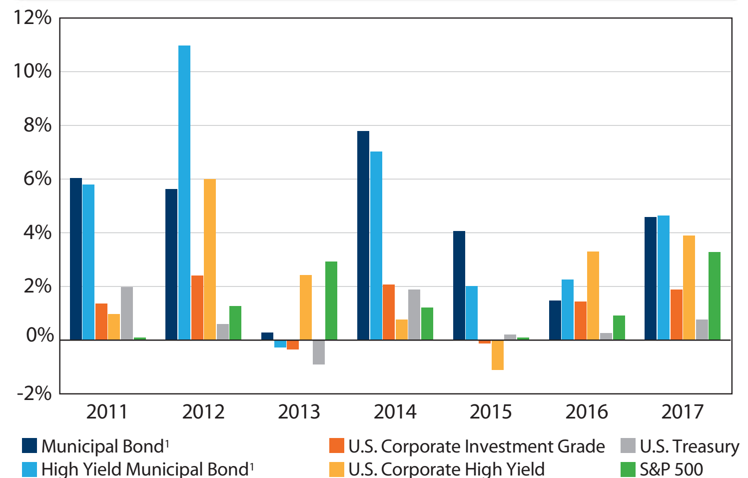
- **Yield Curve:** As the yield curve graph illustrates (see Figure 1), except in the front part of the curve (0-3 years), both AAA and BBB yields declined along the yield curve during 2017. The slope of the yield curve is relatively flat from 20 to 30 years to maturity, increasing 11 bps for AAA rated bonds and just 10 bps for BBB rated bonds. In contrast, the slope of the yield curve is much steeper in the 5-15 year maturity range. In fact, AAA rated bonds increase 58 bps and BBB rated bonds increase 73 bps from 5-15 years to maturity, which is a driving factor in our strategy of positioning municipal portfolios in the intermediate portion of the municipal yield curve.

**Figure 1 – MMD Yield Curves**



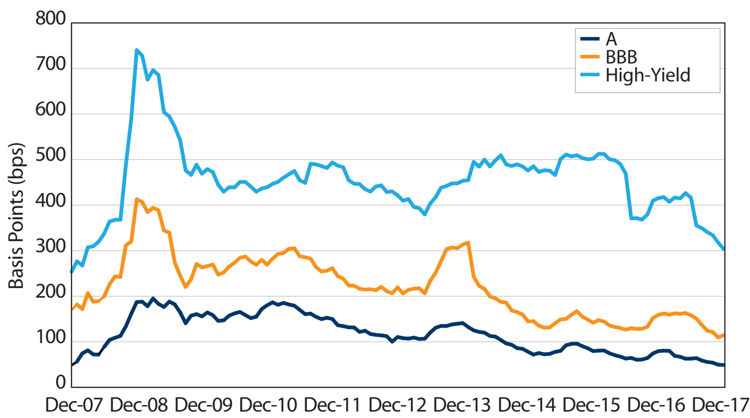

*Source: Municipal Market Data (MMD).*

**Figure 2 – Risk-Adjusted Returns**




*Source: Bloomberg, Barclays. Risk-adjusted returns are calculated by dividing total return by volatility, or the degree of daily price swing variation, giving a measure of income per unit of risk. Past performance is no guarantee of future results.*

## Figure 3 – Municipal Credit Spreads Relative To AAA Municipals




*Source: Bloomberg Barclays 12/31/07 through 12/29/17. For illustrative purposes only. Past performance is no guarantee of future results. See last page for index definitions.*

## Figure 4 – Correlation of Municipal Bonds to Other Asset Classes

| Asset Class | Correlation |
|---|---|
| U.S. Equities | 0.10 |
| U.S. Treasury Bonds | 0.33 |
| U.S. Corporate High-Yield Bonds | 0.34 |
| Mortgage-Backed Securities (MBS) | 0.42 |
| Emerging Market Sovereign Bonds | 0.41 |
| U.S. Corporate Investment Grade Bonds | 0.56 |

*Source: Bloomberg Barclays 12/31/07 through 12/29/17. The historical correlation of the asset classes is for illustrative purposes only and not indicative of any actual investment. Diversification does not guarantee a profit or protect against loss. An index cannot be purchased directly by investors. The asset classes shown here offer different characteristics in terms of income, tax treatment, capital appreciation and risk. See last page for index definitions.*

## Figure 5 – Moody's Average Cumulative Default Rates from 1970-2016, Corporate vs. Municipals

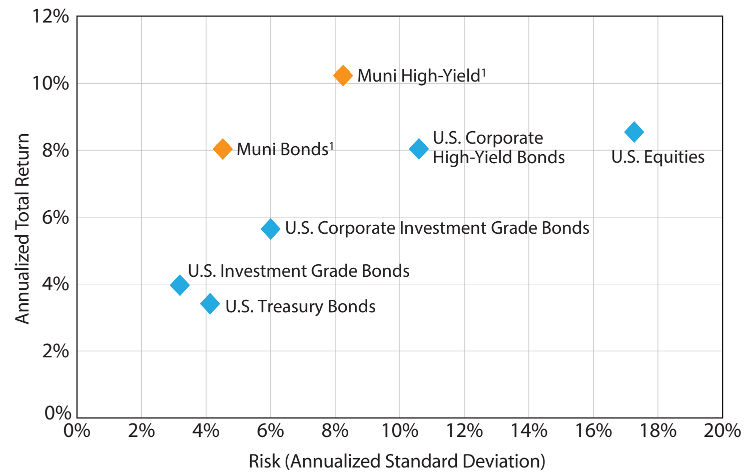
| | 5-Year | | | 10-Year | | |
|---|---|---|---|---|---|---|
| **Rating** | **Corporate** | **Municipal** | **Difference** | **Corporate** | **Municipal** | **Difference** |
| Aaa | **0.09%** | 0.00% | 0.09% | **0.38%** | 0.00% | 0.38% |
| Aa | 0.30% | 0.01% | 0.29% | 0.78% | 0.02% | 0.76% |
| A | 0.77% | **0.03%** | 0.74% | 2.22% | **0.07%** | 2.15% |
| Baa | 1.63% | **0.16%** | 1.47% | 3.93% | **0.40%** | 3.53% |
| Ba | 8.39% | 2.34% | 6.05% | 16.28% | 4.23% | 12.05% |
| B | 21.90% | 12.43% | 9.46% | 36.17% | 17.77% | 18.40% |
| Caa-C | 35.59% | 20.26% | 15.33% | 50.31% | 26.41% | 23.90% |

### First Time MMA Municipal Default Trends

| | 2017 | | 2016 | | 2015 | |
|---|---|---|---|---|---|---|
| | **Number** | **$ Billion** | **Number** | **$ Billion** | **Number** | **$ Billion** |
| YTD | 43 | 33.61 | 69 | 23.63 | 64 | 3.53 |
| Total | 43 | 33.61 | 69 | 23.63 | 64 | 3.53 |

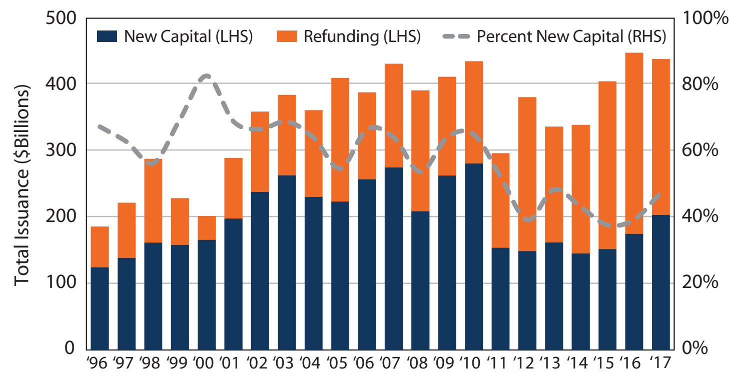
*Source: Moody's Investors Service, Special Comment: U.S. Municipal Bond Defaults and Recoveries, 1970-2016; Municipal Market Analytics (MMA) as of 12/31/17.*

## Figure 6 – Returns and Volatility of Municipal Bonds vs. Other Asset Classes



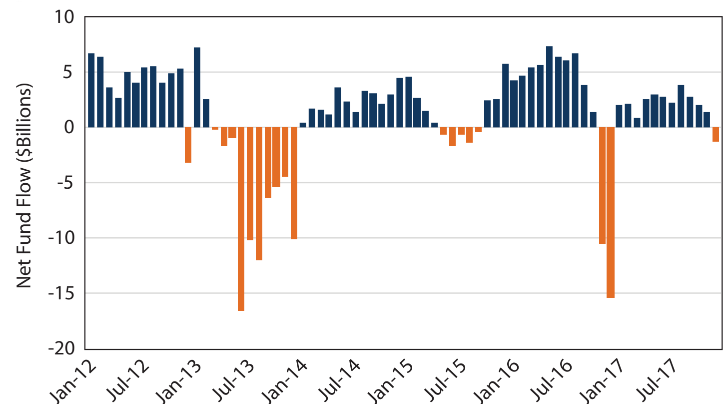

*Source: Bloomberg Barclays 12/31/07 through 12/29/17. This chart is for illustrative purposes only and is not indicative of any actual investment. The illustration excludes the effects of expenses incurred when investing. Past performance is no guarantee of future results. See last page for index definitions.*

## Figure 7 – Municipal Bond Issuance




*Source: Barclays, through 12/29/17.*

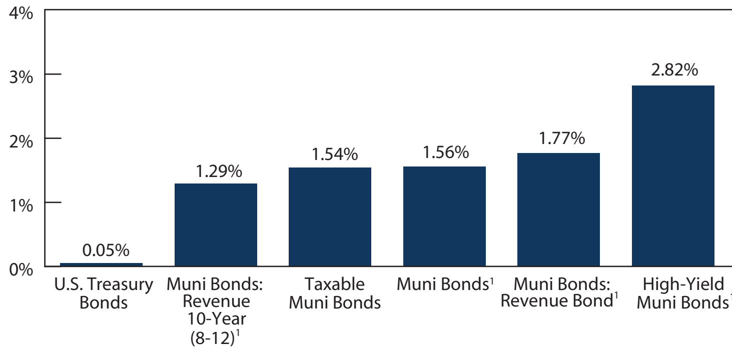
## Figure 8 – Net Municipal Fund Flows

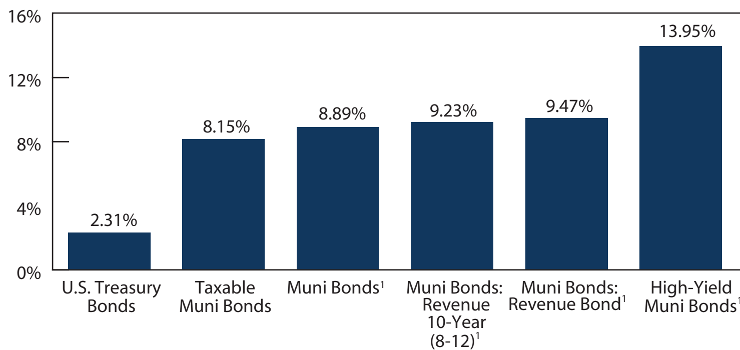


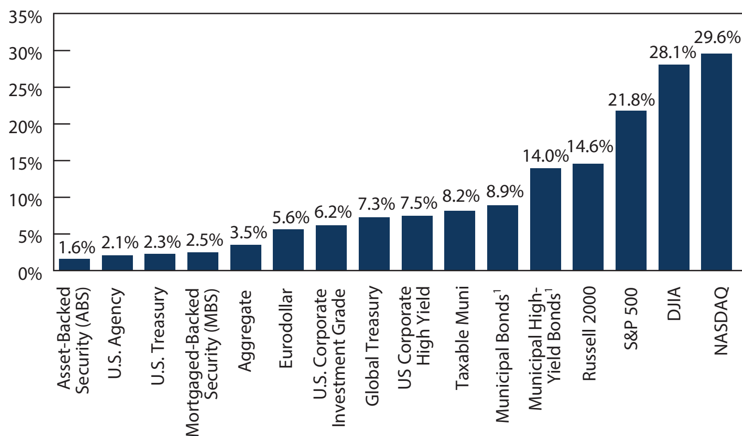

*Source: Barclays, through 12/27/17.*

## Fourth Quarter Review

Building on the third quarter's positive total return of 1.10% for revenue bonds, the fourth quarter as measured by Bloomberg Barclays Municipal Bond Revenue Bond Index posted a return of 0.96% (1.77% on a tax-adjusted basis[1]). Even in the face of record new issue volume, municipal bonds were able to generate positive total returns. As the table below demonstrates, municipal bond returns for the fourth quarter were substantially higher than returns for U.S. Treasury Bonds.




*Source for all charts on this page: Bloomberg Barclays. For illustrative purposes only and not indicative of any actual investment. The illustrations exclude the effects of expenses incurred when investing. Past performance is no guarantee of future results. See last page for index definitions.*

Amongst a diverse array of asset classes, the highest returns over the last twelve months were centered on equities. Outside of equities, high yield municipals, taxable municipals, and investment grade municipal bonds generated superior returns compared to other investment grade, fixed income asset classes.

The fourth quarter of 2017 saw a dramatic increase in primary market municipal bond issuance, up 39.8% year-over-year. For the year, new issue supply totaled $439 billion, only 2% lower than in 2016 when the market had record supply of $446 billion. In December, record supply of over $64 billion topped the previous record of $55 billion set in December 1985, as issuers rushed to market in the face of tax reform eliminating advance refunding of municipal bonds on a tax-exempt basis. Approximately 57% of the $64 billion issued in December was attributable to current and advance refundings. While PAB's tax exemption was left unchanged, the threat of repeal led hospitals, colleges, and universities, among other industries to rush new issues to market before year-end, which was another contributing factor in record new issue supply (see Figure 7).

Retail demand for the fourth quarter totaled $2.1 billion versus $8.8 billion for the third quarter of 2017. Total net inflows for 2017 were $24.1 billion versus $25.5 billion for 2016, a 5.6% reduction. Municipal fund flows were positive during each of the first eleven months of 2017, ranging from a positive $873 million to $3.8 billion, but turned negative in December with outflows of $1.3 billion (see Figure 8).

Municipal credit quality trends continued to be favorable as evidenced by the fact that just eight borrowers defaulted for the first time in the fourth quarter of 2017 compared to 16 during the same period 2016, according to MMA data. The par value of defaults was extremely low compared to a $3.8 trillion market, decreasing from $460 million in the fourth quarter of 2016 to $280 million in the fourth quarter of 2017. First-time municipal defaulters totaled just 43 borrowers for 2017 (see Figure 5), representing a total par value of $33.6 billion, compared to 2016 when 69 borrowers defaulted on $23.6 billion. Of the 43 defaulted borrowers and $33.6 billion par value, Puerto Rico represented 7 borrowers and $32.9 billion of the total defaults in 2017. According to MMA data, 2017 default numbers indicate a record low number of defaulting borrowers going back to when the data was first available in 2009. Moody's credit rating upgrade vs. downgrade ratios also suggest favorable credit trends, with the number of credit rating upgrades exceeding downgrades in two of the first three quarters of 2017, including the quarter ended September 30, 2017.

## Outlook for 2018

As we look ahead to 2018, we see continued overall strength in economic data. The labor market continues to tighten, with nonfarm payrolls increasing at a solid pace (148,000 in December) and the unemployment rate at 4.1% for the third month in a row in December 2017. Wage growth and inflation remain muted, and we expect the economy to continue to grow in the year ahead. We believe the consumer will be the driver in growth, supported by an improving labor market. In addition, personal income tax cuts should start to be felt in the early part of the year through lower tax withholding. Issues to watch include:

**Gradually Rising Rates.** The Federal Reserve increased the Fed Funds rate by 25 basis points on December 13, 2017 and signaled its intention to continue raising rates at a gradual pace. With the Fed in the process of

normalizing short-term interest rates, we believe the Fed is likely to raise the Fed Funds rate two to three times in 2018. We see the 10-year U.S. Treasury yield ending the year between 2.75% and 3.00% from its December 31st level of 2.43%. Further influencing 2018 will be the Fed continuing to shrink its $4.5 trillion balance sheet through the tapering program it announced in late 2017. As the Fed has stated, Fed rate actions will be data dependent, with a focus on supportive economic data including jobs and wage growth, inflation and inflation expectations.

**Decrease in new issue supply.** We expect new issue supply in 2018 to be down dramatically from the $439 billion that came to market in 2017, ending the year somewhere between $290 and $330 billion. Because issuers brought a record number of deals to market in December (that may have otherwise come in 2018) in the face of federal tax reform and the potential elimination of advance refundings and the tax-exemption on private activity bonds (the tax exemption on PABs was ultimately left unchanged), we think new issue supply could be over $100 billion lower than in 2017.

**Positive, but volatile fund flows.** Despite our expectation for higher rates in 2018, we believe flows into municipal bond funds will be positive, but volatile, particularly if yields move higher and bond prices decline for a persistent period of time at some point during the year. We believe that any sustained outflows that lead to higher yields will be interpreted by investors as an attractive buying opportunity in view of the relative attractiveness of risk-adjusted municipal returns versus other asset classes. With the cut in the federal corporate tax rate to 21%, tax-exempt municipal securities may not look as attractive to institutional buyers such as banks, life insurance companies, and property & casualty (P&C) insurance companies. According to data from Citi Research, as of September 30, 2017, U.S banks held approximately 14.7%, P&Cs 9.0%, and life insurance companies 4.9% of the $3.8 trillion of total municipal bonds outstanding. Prior to the new tax code, the median effective tax rates for the 5-10 largest U.S. banks, life insurance companies and P&C companies was 23.5%, 19.1% and 24.5%, respectively. With the post-tax reform effective tax rates of 21%, 15% and 21%, respectively, we could see a slight softening of demand from P&Cs and banks.

**Stable municipal credit quality.** We expect municipal credit quality to remain broadly stable in 2018. We have positive sector outlooks for senior living, toll roads, airports and special tax districts backed by residential real estate assets. We remain cautious on hospitals, especially those located in states that adopted the Affordable Care Act (ACA) and possess high exposures to Medicaid coupled with weak operating cash flow and debt service coverage. With the recent repeal of the individual mandate under the ACA, fewer people will be covered on the healthcare exchanges, leading to rising self-pay patients and increasing allowances for bad debt which could negatively impact operating cash flow margins. We have favored revenue bonds over general obligation bonds in states with growing economies and stable credit profiles such as California, Florida and Texas while underweighting revenue bonds in states with weaker economies, balance sheets, pension-related issues and legacy liabilities such as Illinois and New Jersey. There are a number of high profile borrowers who will continue to struggle with escalating pension burdens, budgetary imbalances, political gridlock, demographic shifts, and medical expenses. With the U.S. economy growing moderately, these large borrowers appear to have some time to get their fiscal houses in order, but legislative leaders need to implement service cuts and tax increases to reach true budgetary stability. These borrowers will remain particularly vulnerable should the U.S. economy start to slow.

## Strategy and Recommendations

In spite our expectation for gradually higher interest rates in 2018, we believe there are attractive opportunities in municipal bonds relative to other fixed income asset classes and that municipal performance will be positive. Applying our total return analysis to our exchange-traded fund (ETF) and separately managed account (SMA) strategies and assuming municipal interest rates increase 30 basis points symmetrically along the yield curve during the course of the year, we would expect our SMA and ETF strategies to produce positive total returns of approximately 2.00% to 2.50% over the next twelve months. Regarding high yield municipal bonds, given we project credit spreads to tighten, we believe intermediate high yield munis will experience positive total returns of between 2.5% and 3.0% for 2018. In the event we're wrong and municipal rates stay unchanged, the total return analysis for our investment grade ETF and SMA strategies would produce positive total returns of between 3.00% and 3.50%, and 3.50% to 4.50% for high yield. This analysis assumes no change in credit spreads or trading activity that could potentially add or detract from performance. Because of active portfolio management and the flexibility we have to tactically adjust duration, credit quality, industry/sector allocation, and yield curve positioning as market conditions change, we believe our portfolios could outperform these estimates.

Given the low correlation of municipal bonds to other major asset classes such as U.S. equities (10-year correlation of 0.10) (see Figure 4), as well as their attractive taxable-equivalent yields and favorable risk-adjusted returns (see Figure 2), we view municipal bonds as a foundational component of a diversified portfolio. Given our expectation of higher rates, we believe total return oriented investors should consider positioning their municipal portfolios more defensively by underweighting longer duration and leveraged strategies, and moving to the intermediate portion of the municipal yield curve. Bonds in this area of the curve are typically less interest-rate sensitive, benefit from the steeper yield curve slope, and are less sensitive to Fed rate hikes than shorter dated bonds. We also believe longer duration (i.e. more interest rate sensitive) open-end strategies such as mutual funds and ETFs could experience more selling pressure (i.e. outflows or share redemptions) in a persistent period of rates up.

On the credit side, we continue to favor "A" rated bonds and select below investment grade and non-rated securities given encouraging municipal credit fundamentals. While we are currently overweight "BBB" rated bonds, we are purchasing fewer BBB rated securities due to relatively tight credit spreads for "BBB" rated bonds. We also favor essential service revenue bond sectors such as special tax, senior living, charter schools, and utilities which, in our view, have additional default-risk insulation because of the borrowers' essentiality in their local communities.

*All opinions constitute judgements as of the date of release and are subject to change without notice. There can be no assurance that any forecasts will be achieved. Data is taken from sources we believe to be accurate and reliable but we do not guarantee its accuracy or completeness.*

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# Index Definitions

**Municipal Bonds** are represented by the Bloomberg Barclays Municipal Bond Index which is a rules-based, investment-grade, market-value-weighted index engineered for the long-term tax-exempt bond market.

**Municipal Bonds: Revenue Bond** – Revenue bonds that are part of the Bloomberg Barclays Municipal Bond Index.

**Municipal Bonds: BBB** – BBB-rated bonds that are part of the Bloomberg Barclays Municipal Bond Index.

**Municipal Bonds: Revenue 10-Year (8-12)** – Revenue bonds that have a final maturity between 8 and 12 years that are part of the Bloomberg Barclays Municipal Bond Index.

**High-Yield Municipal Bonds** are represented by the Bloomberg Barclays Municipal High Yield Index which is composed of publicly traded municipal bonds that cover the U.S. dollar-denominated high-yield short-term tax-exempt bond market. To be included in the Index, a bond must have a nominal maturity of 1 to 10 years.

**U.S. Treasury Bonds** are represented by the Bloomberg Barclays U.S. Treasury Index which includes public obligations of the U.S. Treasury with a remaining maturity of one year or more.

**U.S. Corporate Investment Grade Bonds** are represented by the Bloomberg Barclays U.S. Credit Index which measures the performance of investment-grade corporate debt and agency bonds that are U.S. dollar-denominated and have a remaining maturity of greater than one year.

**U.S. Corporate High-Yield Bonds** are represented by the Bloomberg Barclays U.S. Corporate High Yield Index which is composed of U.S. dollar-denominated fixed-rate, publicly issued, non-investment grade debt.

**U.S. Investment Grade Bonds** are represented by the Bloomberg Barclays U.S. Aggregate Bond Index which covers the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass throughs), ABS, and CMBS.

**Mortgage-Backed Securities (MBS)** are represented by the Bloomberg Barclays U.S. MBS Index which measures the performance of investment grade fixed-rate mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

**Emerging Market Sovereign Bonds** are represented by the Bloomberg Barclays Capital EM USD Aggregate Index which includes U.S. dollar-denominated bonds that have maturities longer than one year and that were issued by emerging market governments and government related issuers.

**U.S. Equities** are represented by the S&P 500 Index which is an unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance.

**Global Treasury** is represented by the Bloomberg Barclays Global Treasury Index which tracks fixed-rate, local currency government debt investment grade countries, including both developed and emerging markets.

The **Bloomberg Barclays Municipal Bond AAA Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds rated Aaa by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Bloomberg Barclays Municipal Bond A Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds rated A by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Bloomberg Barclays Municipal Bond BAA Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and prerefunded bonds rated Baa by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Russell 2000 Index** is a small-cap stock market index of the bottom 2,000 stocks in the Russell 3000 Index.

The **NASDAQ Composite** is a stock market index of the common stocks and similar securities listed on the NASDAQ stock market.

**Asset-Backed Security (ABS)** is represented by the Bloomberg Barclays Asset-Backed Securities Index which includes assets back by credit and charge cards, autos and utilities.

**U.S. Agency** is represented by the Bloomberg Barclays U.S. Agency Index which is comprised of debt issued by U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government.

The **Dow Jones Industrial Average (DJIA)** is an index that shows how 30 large publicly owned companies based in the United States have traded during a standard trading session in the stock market

**Aggregate** is represented by the Bloomberg Barclays Aggregate Bond Index which is a broad-based index that includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds, and a small amount of foreign bonds traded in U.S.

**Eurodollar** is represented by the Bloomberg Barclays Eurodollar Index which consists of fixed-rate investment grade U.S. dollar-denominated securities that are registered outside of the U.S.

**Taxable Muni Bonds** is represented by the Bloomberg Barclays Taxable Municipal Bond Index which is a rules-based, market-value-weighted index engineered for the long-term taxable bond market.

[1] Taxable-equivalent measures illustrate approximately what an investor would have to earn on taxable investments to equal the tax-exempt annualized return using the highest federal tax bracket (39.6%) and another 3.8% for the Medicare Tax for 2017. State and local taxes have not been considered. This information is based on law as of the date of calculation and does not account for any proposed changes in tax rates. This information does not account for limitations on deductions, the alternative minimum tax or taxes other than Federal personal income tax. It is important to note that there are differences between the investment objectives and risks of municipal bonds versus the asset classes shown.